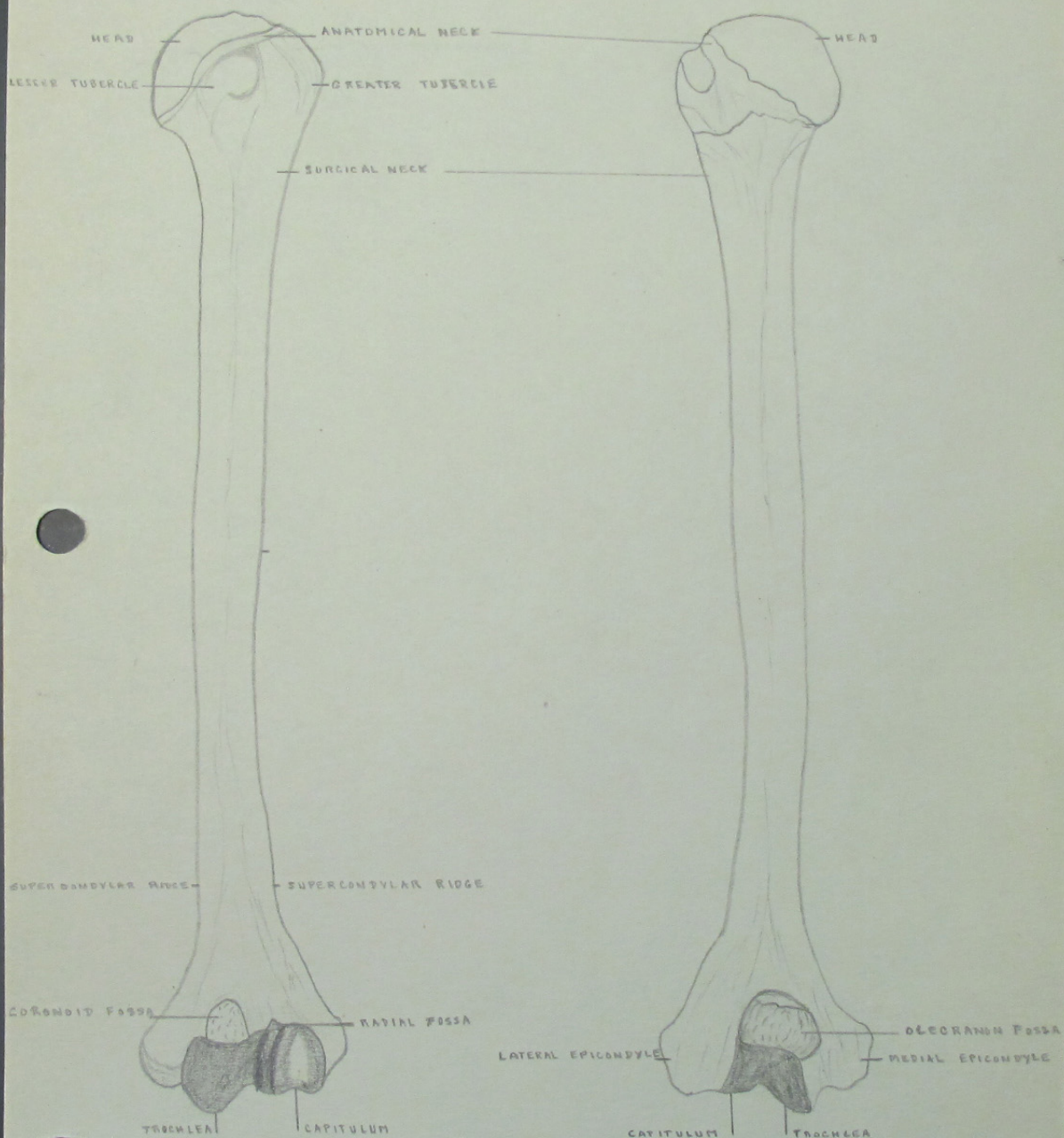
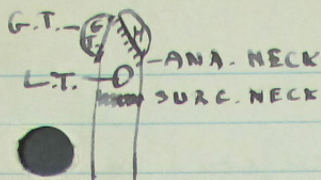


THE LEFT HUMERUS

VENTRAL ASPECT OF LEFT HUMERUS

DORSAL ASPECT OF LEFT HUMERUS





Shaft - cylindrical above.
- broad below.

cylindrical above because upper end has a round head.

broad below because lower end flattened from before backwards.

lower end - joins with forearm bones at elbow.

1) - on medial side, a trochlea (pulley) to fit the ulna. Above trochlea is a pit called coronoid fossa, receives coronoid of ulna. On the back, olecranon fossa for olecranon ^{process} of ulna.

2) - on lateral to the trochlea is a little head for radius - capitulum (little head). Above front of capitulum is radial fossa for radius. (only on front, not behind)

On sides of lower end are 2 bumps the medial & lateral epicondyles.

- use - for forearm muscles - medial is larger. Running up from each epicondyle a subcondylar ridge.

Growth of long bones - (in) humerus.

Read P. 318 - Marshall.

Ossification - process of bone formation.
- starts in embryo stage.
- completed at 20 yrs.

Two methods of ossification.

1) Intramembranous -

- deposit of lime salts in fibrous connective tissue, forming membrane bone.
(ex) flat bones of face & cranium.

2) Intracartilaginous -

- takes place within cartilage.
forms cartilage bone.

most proved this way.

Begins in definite centres of ossification. ●
Each bone has characteristic numbers of centres.
Long bones - 3 centres.

- 1) Primary center or diaphysis - in shaft.
- 2) Secondary centers or epiphyses - one for each extremity.

Epiphyses - called pressure epiphyses
- resist pressure.

- " - called traction epiphyses
- one for each bony prominence, tendons, muscles, ligaments attach.

Diaphysis appears before birth, epiphyses after.
Diaphysis + epiphyses separated by unossified cartilage. In young bones is epiphyseal cartilage or line. Bone is made up of many distinct bony pieces, which consolidate at ossification but not before.
Cartilage bones grow in thickness by deposition of new layers of bone under periosteum, through action of bone-forming cells or osteoblasts in osteogenic layer.

Cartilage bones grow in length in epiphyseal cartilages. When epiphyses united - elongation of bone ceases, as cartilages reduced.

Growth of individual ceases at complete ossification of epiphyseal cartilages.

When complete, remaining cartilage - a thin layer covering articular surfaces of bone.

This is articular cartilage - breaks shocks at various joints. ●

Epiphyseal cartilages - buffers to diminish concussions.

LEFT TIBIA AND FIBULA

ANTERIOR VIEW

POSTERIOR VIEW

MEDIAL CONDYLE

LATERAL CONDYLE

MEDIAL CONDYLE

TUBEROSITY FOR
PATELLAR LIGAMENT

TIBIA

FIBULA

FIBULA

TIBIA

MEDIAL
MALLEOLUS

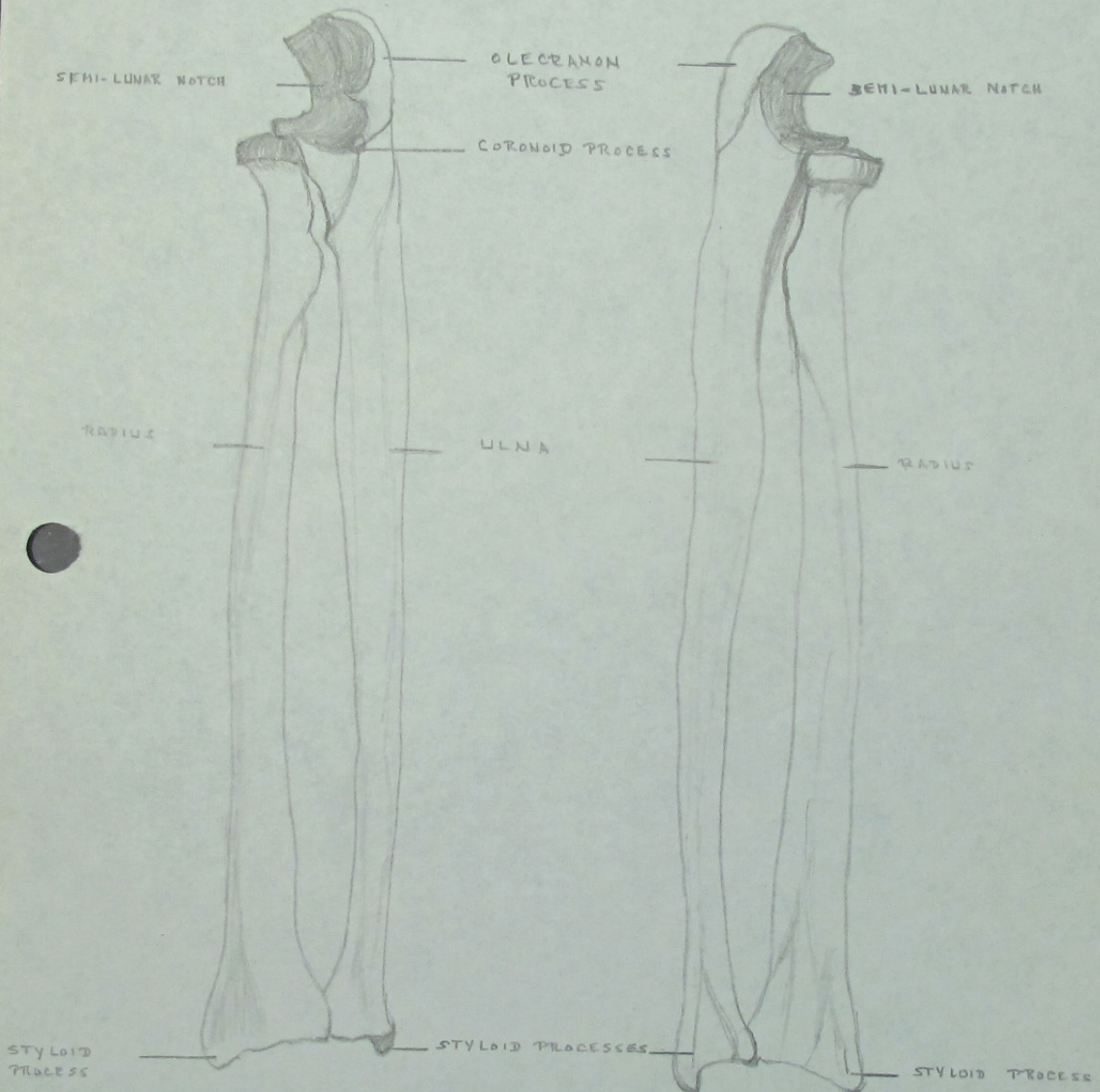
LATERAL MALLEOLUS

MEDIAL
MALLEOLUS

RIGHT RADIUS AND ULNA

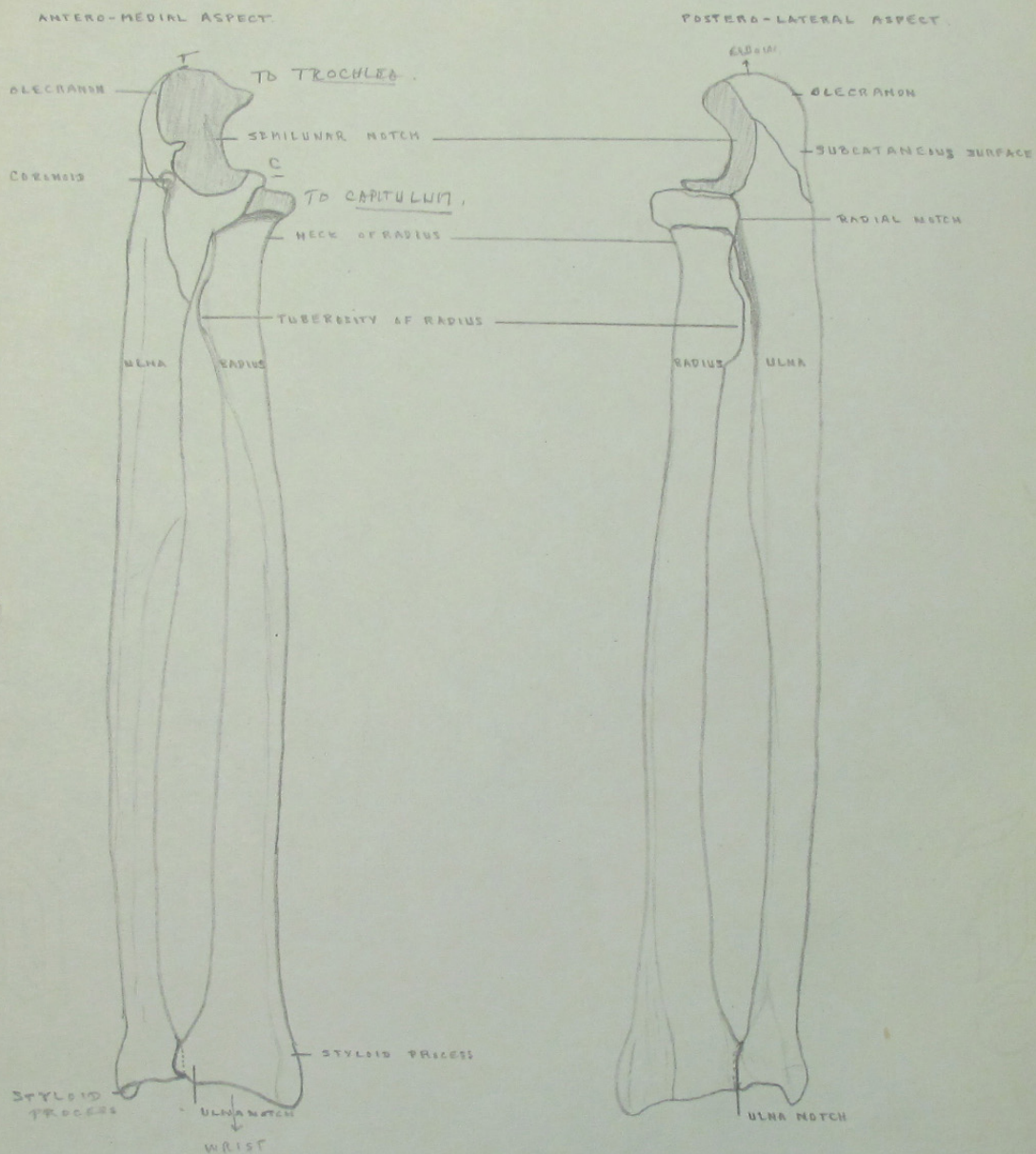
POSTERO-LATERAL VIEW

ANTERO-MEDIAL VIEW



LABEL VIEWS!

LEFT ULNA + RADIUS.



Bones of the forearm

Second segment - 2 bones.

Medial side - ulna.

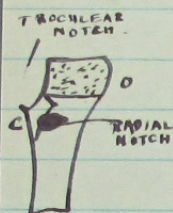
Lateral side - radius.

- both long bones - ends + a shaft.

Ulna - upper end is large as it articulates with humerus at the elbow.

- two processes. 1) olecranon (above + behind) it fits trochlea of humerus.

2) coronoid - smaller process. (anterior + below) it fits trochlea.



On lateral side is radial notch for head of radius.

- shaft simple - tapers below - the head is the lower end - is small + rounded so that lower end of radius can swing around it. Spike called styloid towards back + medial side of end.

Radius - upper end is small end - head like a disc. Its upper surface hollowed for capitulum. Side of head spins in radial notch.

- below head is neck + below neck the tuberosity - a bump for the biceps tendon.

shaft - increases as it descends + is bowed laterally.

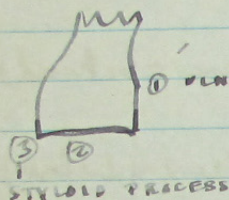
- shaft of both radius + ulna Δ on section - bony edges sharp for the interosseous membrane.



- bones with interosseous membrane have trough in front + behind for muscle attachment.

lower end of radius - large end.

- on medial side an ulna notch for lower end of ulna.
- on distal surface, its hollowed for wrist bones
- laterally a styloid process.



- 2 movements of arm.

- 1) swing arm so hand faces posteriorly - pronation.
- 2) reverse is supination.

- upper end of radius spins.
- lower end swings.
- at elbow, ulna is chief articulation.
- radius carries wrist bones.

Wrist & hand

- wrist I carpal bones.
- II metacarpal bones (beyond) bones of palm.
- III phalanges. (finger-bones)

Carpal bones - 8 is 2 rows of 4 each.

- small bones - more or less 6-sided.
- are arranged in an arch, the hollow towards front. Hollow in life bridged with a ligament, making tunnel for nerve & blood-vessels to reach hand.
- join radius - rounded to fit it.
- proximal row fits radius
- distal row fits metacarpal bones.



Metacarpal - long bones - base proximally to fit carpal.

- round head distally to fit phalanges

Articulations of Movements to lift Object

1. Rotate ulna, radius & humerus from supination to pronation.
2. Flex elbow, lifting ulna and radius.
3. Extend phalanges to grasp pencil.
4. Contract phalanges to pick up pencil.
5. Rotate ulna & radius.
6. Flex elbow to raise forearm & hand.
7. Extend phalanges to touch nose with pencil.



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